Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (twice amended) A method for producing biocompetent fibrinogen comprising:

providing a first DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Aα chain, the DNA segment comprising genomic DNA encoding the Aα chain, a second DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Bβ chain, the DNA segment comprising genomic DNA encoding the Bβ chain, and a third DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen γ chain, the DNA segment comprising genomic DNA encoding the γ chain, wherein each chain is from the same species, and wherein each of said first, second and third segments is operably linked to additional DNA segments required for its expression in the mammary gland of a host female mammal and the first, second, third segments are linked in a single vector;

introducing said DNA segments into an [fertilized] egg or early stage embryo of a non-human mammalian species heterologous to the species of origin of said fibrinogen chains;

inserting said egg or early stage embryo into an oviduct or uterus of a female of said mammalian species to obtain offspring carrying said DNA segments;

breeding said offspring to produce female progeny that express said first, second and third DNA segments and produce milk containing biocompetent fibrinogen encoded by said segments;

collecting milk from said female progeny; and

and recovering the biocompetent fibrinogen from the milk.

2. (original) A method according to claim 1 wherein said species into which said DNA segments are introduced is selected from the group consisting of sheep, pigs, goats, and cattle.

3. (canceled)

4. (canceled)

5. (original) A method according to claim 1 wherein each of said first, second and third DNA segments is operably linked to a transcription promoter selected from the group consisting of casein, β-lactoglobulin, α-lactalbumin and whey acidic protein gene promoters.

6. (original) A method according to claim 1 wherein said first, second and third DNA segments are expressed under the control of a β-lactoglobulin promoter.

7. (twice amended) A method according to claim 1 wherein said introducing step comprises injecting said first, second and third DNA segments into a pronucleus of said [fertilized] egg or early stage embryo.

8. (original) A method according to claim 1 wherein said fibrinogen is human fibrinogen.

9. (original) A method according to claim 1 wherein said second DNA segment comprises a sequence of nucleotides as shown in SEQ ID NO: 3 from nucleotide 470 to nucleotide 8100.

10. (original) A method according to claim 1 wherein said second DNA segment comprises a sequence of nucleotides as shown in SEQ ID NO: 3 from nucleotide 512 to nucleotide 8100.

11. (original) A method according to claim 1 wherein said species into which said DNA segments is introduced is sheep.

12. (thrice amended) A method of producing biocompetent fibrinogen comprising:

incorporating into operable linkage a [first] DNA segment encoding a secretion signal, [operably linked to] a genomic DNA segment encoding an Aα chain of fibrinogen [into a β-lactoglobulin gene] and an additional segment required for expression of the Aα chain in the mammary gland of a mammal to produce a first gene fusion [comprising a β-lactoglobulin promoter operably linked to the first DNA segment];

incorporating into operable linkage a [second] DNA segment encoding a secretion signal, a genomic DNA segment encoding [operably linked to] a Bβ chain of fibrinogen [into a β-lactoglobulin gene] and an additional segment required for expression of the Bβ chain to produce a second gene fusion [comprising a β-lactoglobulin promoter operably linked to the second DNA segment];

incorporating into operable linkage a [third] DNA segment encoding a secretion signal, a genomic DNA segment encoding [operably linked to] a γ chain of fibrinogen and an additional segment required for expression of the γ chain [into a β-lactoglobulin gene] to produce a third gene fusion, [comprising a β-lactoglobulin promoter operably linked to the third DNA segment] wherein each of said first, second and third segments are of the same species;

linking the first, second and third gene fusions in a single vector; introducing said first, second and third gene fusions into the germ line of a non-human mammal so that said DNA segments are expressed in a mammary gland of said mammal or its female progeny and biocompetent fibrinogen is secreted into milk of said mammal or its female progeny;

obtaining milk from said mammal or its female progeny; and

recovering said fibrinogen from said milk.

13. (original) A method according to claim 12 wherein said mammal is a sheep, pig, goat or cow.

14. (canceled)

15. (canceled)

16. (original) A method according to claim 12 wherein said introducing step comprises injecting said first, second and third gene fusions into a pronucleus of a fertilized egg and inserting said egg into an oviduct of a pseudopregnant female to produce female offspring carrying said gene fusions in the germ line, wherein said egg and said pseudopregnant female are of the same species.

17. (original) A method according to claim 12 wherein said mammal is a sheep.

18-22. (canceled)

23. (twice amended) A process for producing a transgenic offspring of a mammal comprising:

providing a first DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Aα chain, the DNA segment comprising genomic DNA encoding the Aα chain; a second DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Bβ chain, the DNA segment comprising genomic DNA encoding the Bβ chain; and a third DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen γ chain, the DNA segment comprising genomic DNA encoding the γ chain; wherein each chain is derived from the same species, and wherein each of said first, second and third segments is operably linked to additional DNA segments required for its expression in the mammary gland of a host female mammal;

linking the first, second and third segments in a single vector;

introducing said DNA segments into an [fertilized] egg or an early stage embryo of a non-human mammalian species heterologous to the species of origin of said fibrinogen chains;

inserting said [fertilized] egg or early stage embryo into an oviduct or uterus of a female of said mammalian species; and

allowing said [fertilized] egg or early stage embryo to develop thereby producing transgenic offspring carrying said first, second and third DNA segments,

wherein female progeny of said mammal express said DNA segments in a mammary gland to produce biocompetent fibrinogen.

24. (original) A process according to claim 23 wherein said offspring is female.

25. (original) A process according to claim 23 wherein said offspring is male.

26-33. (canceled)

34. (amended) A set of DNA sequences comprising:

a first DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Aα chain, the DNA segment comprising genomic DNA encoding the Aα chain;

a second DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen Bβ chain, the DNA segment comprising genomic DNA encoding the Bβ chain; and

a third DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen γ chain, the DNA segment comprising genomic DNA encoding the γ chain, wherein each chain is from the same species, and wherein each of said first, second and third segments is operably linked to additional DNA segments required for its expression in the mammary gland of a host female mammal;

and the first, second, third segments are linked in a single vector.